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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,622

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EXAMINER

ELVE, MARIA ALEXANDRA

ART UNIT

PAPER NUMBER

3742

MAIL DATE

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10/14/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,622	<b>Applicant(s)</b> RIPPL ET AL.	
	<b>Examiner</b> M. Alexandra Elve	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17, 18, 20, 22-26 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17, 18, 20, 22-26 and 28-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 5 & 14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. “machine readable medium”.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. “switching a focal distance”

Claims 1, 10 & 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite a means (or step) plus function limitation.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, 8, 10, 13, 14, 18, 21-22, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel (US Re.34597) in view of lehisa (US 6555784 B2).

Regarding claims 1 and 10, Akeel discloses a laser device for laser machining, including the laser welding of automobile parts comprising (Akeel-col.1, lines 66-68; col.1, lines 47-52; col.2, lines 1-4):

a six-axis manipulator i.e. robot (Akeel-col.4, lines 27-40);

a laser source that generates a laser beam (Akeel-col.4, lines 52-55);

wherein said manipulator can be controlled in terms of said motion of its hand axes such that said laser beam can be deflected by variable deflection angles with respect to the mirrors attached to the robot (Akeel-col.4, lines 33-64);

a focusing lens with a longer focal length i.e. distance (Akeel-col.2, lines 29-31).

Akeel also discloses that a laser can be mounted on the top of an articulated arm-robot and that the laser power can be variably controlled (Akeel-col.2, lines 17-18 and col.1, lines 38-46) but fails to disclose wherein said laser source can be connected via a guide means to one laser tool at said one six-axis manipulator; wherein said manipulator holds a remote laser tool with a focal distance and guides same

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floatingly at a contact-free distance above said workpiece along a machining path; wherein said manipulator can be controlled in terms of said motion of hand axes such that said laser beam can be deflected by variable deflection angles and wherein said power of said laser source can be controlled variably and as a function of motions of said laser beam.

lehisa et al (hereinafter lehisa) discloses a laser machining apparatus for performing machining operations such as welding and cutting on a vehicle body positioned on a manufacturing line (lehisa-col.2, lines 61-67; lehisa-col.3, lines 39-54; lehisa-col.6, lines 41-42) comprising:

At least one manipulator i.e. robot (RB1 to RB8-fig.1 below);

A laser supply station (LSS) which can subsequently be connected by way of a guide means (F1) to at least one laser tool (TL1 to TL8) at said at least one manipulator (RB1 to RB8) (refer to fig.1 below for all reference characters);

At least one optical element with a changeable/variable position used to determine the desired focal length/distance (A-fig.7 below);

At least one optical element so that said laser beam can be deflected/reflected with respect to various deflected/reflected angles (lehisa-col.4, lines 40-67).

FIG. 1

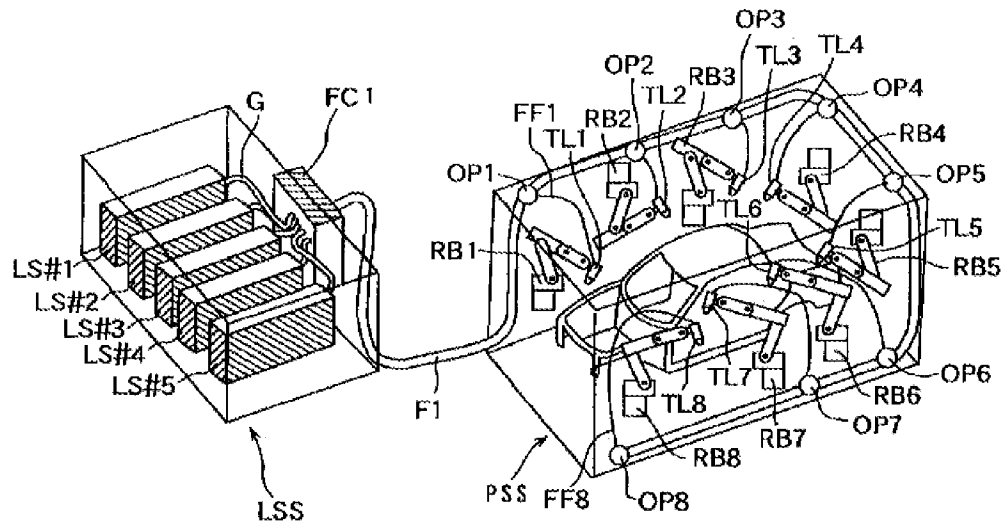
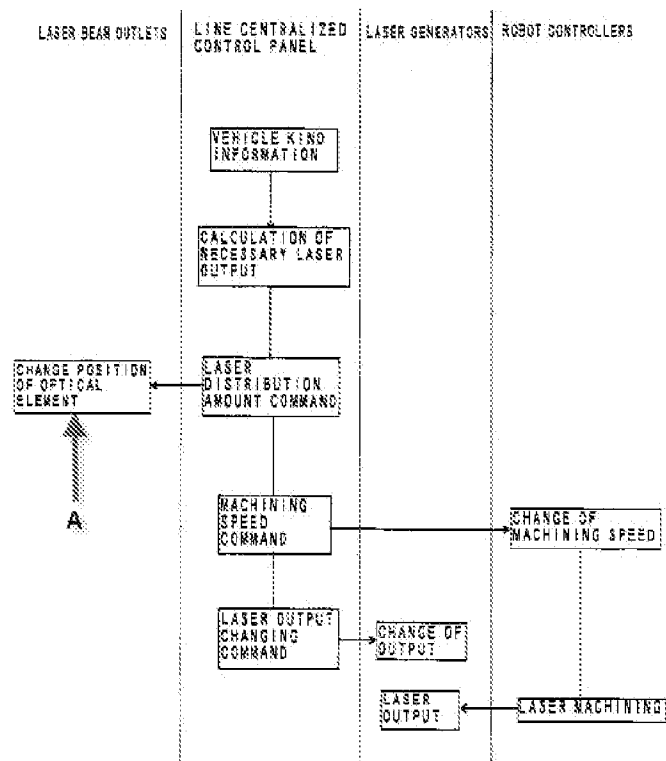


FIG. 7



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lehisa further discloses a centralized control panel that controls the laser outputs of the laser generator as a function of the laser beam outputs that are required by the respective machining tools based on the workpiece-type information (lehisa-col.6, lines 66-67 and lehisa-col.7, lines 1-2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate lehisa's robotic/laser tool aspect into Akeel to provide more control over the robotic laser machining process.

Akeel in view of lehisa discloses a laser device wherein said laser source and said manipulator have a common control (lehisa-col.6, lines 34-37 and lehisa-col.6, lines 45-49).

Akeel in view of lehisa discloses wherein said control has at least one said computer and at least one memory with one or more programs and with at least one technology data bank, with which program and data bank said motions to be performed by said manipulator and said laser process parameters can be automatically determined and carried out on said basis of input workpiece data (lehisa-col.6, lines 29-44 and lehisa-col.6, lines 59-65).

Akeel in view of lehisa discloses a laser device where said laser supply station (LSS-fig.1 from claim 10) has one or more tools (TL1 to TL8-fig.1 from claim 10) for said workpiece, which are connected to said control (lehisa-col.6, lines 45-49).

Akeel in view of lehisa discloses a laser device wherein said guide means (i.e. guide system) has a modular/flexible/fiber cable design and has a plurality of conductor sections (G,F1) that can be connected to a coupling connection (FC1) (refer to fig.1

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from claim 10 for all reference characters).

Akeel in view of lehisa discloses wherein said guide means is designed as a fiber optic cable and said laser supply station/source is designed as a either a YAG or fiber laser (i.e. light in which the medium is an optical fiber) (lehisa-col.3, lines 13-17; lehisa-col.2, lines 46-48).

Akeel in view of lehisa discloses a laser device wherein said manipulator is designed as a multiaxial industrial robot, comprising a six-axis articulated arm robot with said axes (Akeel-col.4, lines 37-49).

Akeel in view of lehisa discloses a laser device wherein said hand has three said rotary hand axes (Akeel-col.4, lines 37-49).

3. Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of lehisa and Ishiguro (US 4831316).

Akeel in view of lehisa discloses that an operator controls the robot-laser system (Aheer-col.7, lines 47-63) but fails to disclose a laser device wherein said control has an input unit (i.e. keyboard and/or drive for said portable data storage media and/or at least one interface for a data line) for inputting workpiece data by an operator on site.

Ishiguro et al (herein after Ishiguro) discloses a robot system comprising: a six-axis robot for machining a workpiece by means of a laser beam; a robot controller; a teaching box i.e. computer station for permitting an operator to teach the robot in advance of how to proceed with the job; a keyboard; an external memory device; a bus line (Ishiguro-col.4, lines 10-25 and Ishiguro-col.6, lines 46-58).



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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Ishiguro's input devices so that the operator can upload data into the computer of the robotic laser system.

4. Claims 2, 3, 11-12 & 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of Iehisa and Briand (US 6603092 B2).

Akeel in view of lehisa discloses that the 6-axis manipulator is capable of guiding a laser beam (Aheel-col.7, lines 47-48) but fails to disclose wherein said beam deflecting motion of said hand axes is superimposed to said displacing motion.

Briand et al (hereinafter Briand) discloses a process for welding metal workpieces intended for the motor-vehicle industry (Briand-entire abstract). Briand discloses that said welding process involves the use of robots and a laser beam deflection motion during said welding (Briand-col.3, lines 4-9; col.6, lines 11-27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Briand's laser beam deflection motion into Akeel in view of lehisa's device so that the deflecting motion of said hand axes is superimposed relative to said displacing motion.

Akeel in view of lehisa and Briand discloses that said deflected beam in a now superimposed state can be directed relatively opposite said motion relative to the welding process (Briand-col.6, lines 60-67).

5. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of lehisa, Briand, and Hamada (US 6888096 B1).

Akeel in view of lehisa and Briand fails to disclose a laser device wherein said laser source and said displacing and beam deflecting motions to be performed by said manipulator can be determined and controlled according to section energies to be introduced into said workpiece.

Hamada discloses a controllable laser oscillator based machining apparatus with the ability to generate a cross-sectional energy distribution. (Hamada-col.7, lines 22-28; col.9, lines 1-4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Hamada's cross sectional energy distribution into Akeel in view of lehisa and Briand's device so that said displacing and beam deflecting motions to be performed by said manipulator can be determined and controlled according to section energies to be introduced into said workpiece.

6. Claims 9, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of lehisa and Ortiz, Jr. (US 5245682).

Akeel in view of lehisa fails to disclose a laser device-wherein said laser tool has a focal distance that can be switched or adjusted and said focal distance is greater than 300 mm.

Ortiz, Jr. discloses a laser processing system consisting of a controller, laser head, manipulator, optical fiber, and various lenses of varying focal lengths. Ortiz, Jr. discloses that said laser processing system has the means to switch/change its focal distance based on the lens that is selected. Ortiz, Jr. also discloses that a lens greater than 300mm can be selected so that a focal distance greater than 300mm is produced (Ortiz, Jr. col.4, lines 44-60)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Ortiz, Jr's focal lenses into Akeel in view of

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lehisa's device so that said laser tool can have a focal distance that is both changeable/adjustable and greater than 300mm.

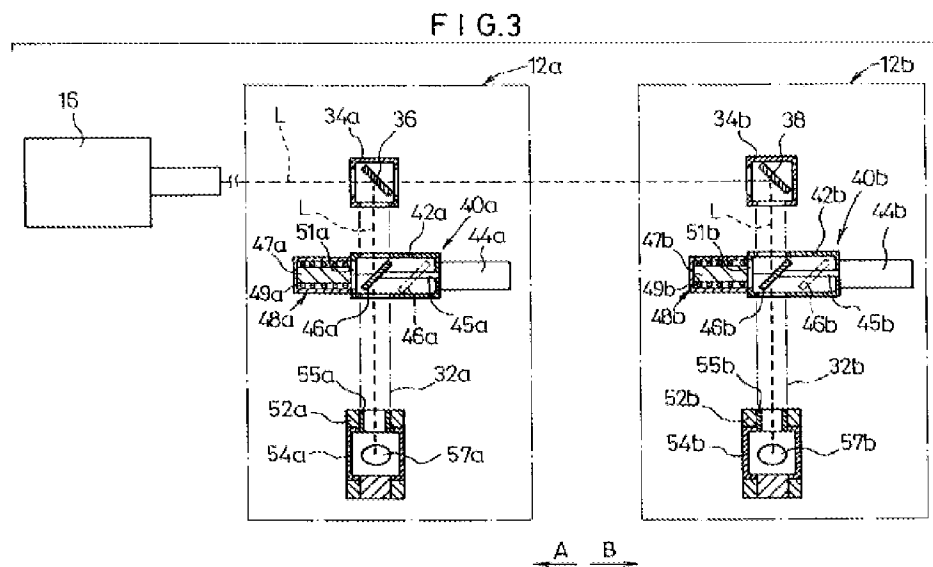
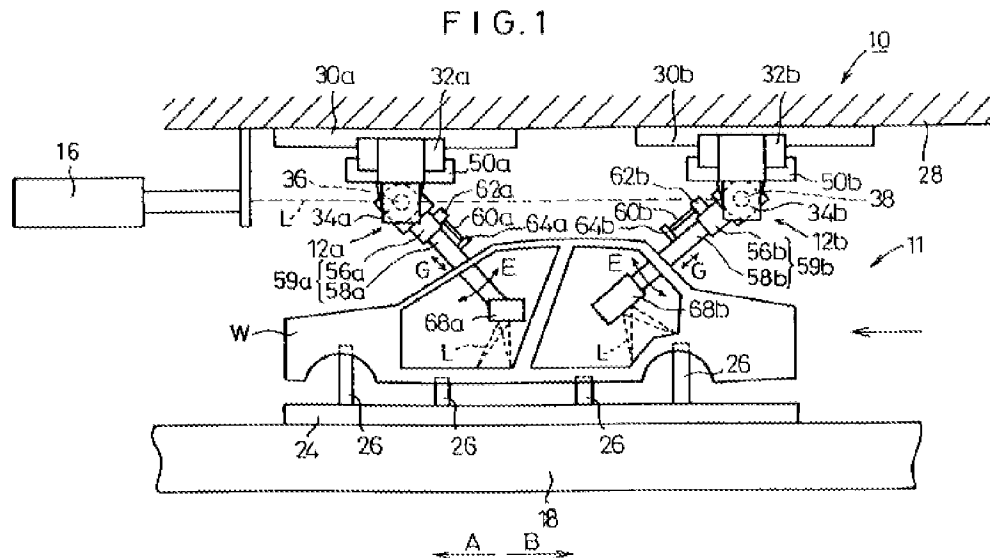
7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akeel in view of lehisa and Maruyama et al (US 6100497).

Akeel in view of lehisa discloses a plurality of manipulators (RB1 to RB8-fig.1 from claim 10) with associated laser tools (TL1 to TL8-fig.1 from claim 10) but fails to disclose wherein a common laser source can be switched by said control to said different laser tools.

Maruyama et al (hereinafter Maruyama) discloses a method and apparatus for welding a workpiece (W) such as an autobody using a single laser source (16), a laser tool (68a) (i.e. scanning welding head) connected to welding robot (12a), and a laser tool (68b) connected to welding robot (12b) (Maruyama-col.5, lines 7-25 and refer to fig.1 below for all reference characters). Maruyama discloses a shutter mechanism (40a) corresponding to welding robot (12a) and a shutter mechanism corresponding to welding robot (12b) (refer to fig.3 below for all numeral references). Maruyama also discloses that shutter mechanisms (40a, 40b) operate to either allow/enable or block/prevent the laser beam (L) generated from the laser source (16) from being supplied to the welding head (68a) of welding robot (12a) and welding head (68a) of welding robot (12b) (Maruyama-col.6, lines 19-23; col.6, lines 58-67 and refer to fig.1 and/or fig.3 below for all reference characters). As a result, it would have been obvious to one of ordinary skill in the art to conclude that the common laser source (16) is

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controlled in the sense that either welding heads (i.e. welding tools) will receive said laser beam from said laser source.



Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Maruyama's common laser source into

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Akeel in view of lehisa's device so that a common laser source can be assigned to said different laser tools.

### ***Response to Arguments***

Applicant's arguments filed 7/23/10 have been fully considered but they are not persuasive.

Applicant argues that the angle of incidence is not taught. The examiner respectfully disagrees because this is disclosed by Akeel and lehisa.

Applicant argues that hand motion is not taught. The examiner respectfully disagrees because Akeel teaches hand axial motion. Furthermore, the provision of mechanical or automated means to replace manual activity was held to have been obvious. In re Venner 120 USPQ 192.

Applicant argues that control is not taught. The examiner respectfully disagrees because a controller is taught by Akeel.

Applicant argues that varying power is not taught. The examiner respectfully disagrees because lehisa discloses varying output levels.

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 7:30-4:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

October 12, 2010.

/M. Alexandra Elve/  
Primary Examiner, Art Unit 3742